

JA



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,886	01/16/2004	Theodore C. Wensink	36214	7003
116	7590	02/22/2005	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			NORMAN, MARC E	
			ART UNIT	PAPER NUMBER
			3744	

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,886

Applicant(s)

WENSINK ET AL.

Examiner

Marc E. Norman

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 and 11-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pannell (U.S. Patent 5,307,645).

As per independent claims 1 and 11, Pannell teaches first and second refrigeration circuits (Figure 2) including respectively compressors Q1 and Q2, condenser coils 56 and 58, expansion devices 70 and 72, and evaporator coils 52 and 54. Pannell does not specifically teach one of expansion devices 70 being a flow regulating expansion valve and the other being a fixed restrictor. However, Pannell does teach that the expansion devices may be either valves or capillary tubes (column 4, lines 52-53). Expansion valves and capillary tubes are both extremely old and well-known in the art. It would have been obvious to one of ordinary skill in the art at

Art Unit: 3744

the time the invention was made to use a combination of one expansion valve and one fixed restrictor in the system of Pannell for the purpose of cost saving (since fixed restrictors are cheaper than valves) in the instance where only one of the restrictors need be variably controlled. It is further noted that the same effect could be achieved using a system with two expansion valves, wherein the second valve is simply left unmodulated.

As per independent claim 16, see discussion of claims 1, 11, and 12, above. Further, official notice is taken that it is common and typical to control expansion valves according to loads based on desired temperature levels, and to add second system capacity when the load is greater than a further increment (see discussions of claims 6 and 31, below).

As per claims 2, 12, 17, 22, and 27, Pannell teaches the evaporator being a common heat exchanger 30.

As per claims 3-5, 14, 15, 19, 20, 24-26, 29, and 30, the interchangeability (and relative attributes) of expansion valves and capillary tubes is discussed above regarding claim 1.

As per claims 13, 18, 21, 23, and 28, again it is common and typical to control expansion valves according to heat loads on evaporators.

As per claims 24 and 25, fluid flow through capillary tubes is inherently fixed (as long as the compressor is not modulated) since the size of the tube is fixed. Again capillary tubes are common and well known in the art.

Claims 6-10 and 31-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pannell in view of Del Toro et al.

As per claims 6 and 31, Pannell does not specifically teach activation/deactivation in response to temperature reference points. Del Toro et al. teaches a similar dual refrigeration

Art Unit: 3744

cycle system wherein the two cycles are activated/deactivated based on temperature reference points (column 3, lines 10 – column 4, line 49). As per claim 31, Del Toro et al. further teaches the temperature increment between the two systems being at least 3 degrees (3-5 degrees, column 3, lines 25-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply this control feature of Del Toro et al. to the system of Pannell for the purpose of using the two cycles to efficiently cool the conditioned space.

As per claims 7, 33, and 38, see discussion above of similar claims 2, 12, 17, 22, and 27.

As per claims 8-10, 35, 36, 40, and 41, see discussion above of similar claims 3-5, 14, 15, 19, 20, 24-26, 29, and 30.

As per claims 32, 34, 37, and 39, see discussion above of similar claims 13, 18, 21, 23, and 28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 571-272-4812. The examiner can normally be reached on Mon.-Fri., 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 571-272-4808. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3744

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN

A handwritten signature in black ink, appearing to read 'Marc Norman', with a stylized flourish at the end.

**MARC NORMAN
PRIMARY EXAMINER**